VOLUME 58
NUMBER 1

WHOLE NO. 266
1945

Psychological Monographs

JOHN F. DASHIELL, *Editor*

Children's Drawings in a Projective Technique

By
PAULA ELKISCH
Community Service Society of New York

Published by
THE AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.

Publications Office
NORTHWESTERN UNIVERSITY, EVANSTON, ILLINOIS

Wahl

ACKNOWLEDGMENTS

THIS STUDY represents an extended chapter of a doctoral dissertation submitted by the author to the University of Michigan at Ann Arbor. The author wishes to express her deepest gratitude to the members of her committee. Professor Willard C. Olson, Director of Research in Child Development, Chairman, Professors Dewit H. Parker, Theophile Raphael, William Clark Trow and Clifford Woody participated in this study by guiding interest in its objectives and keen scientific advice.

The author is gratefully indebted also to Dr. Edward J. Humphreys, Director of Research in Mental Deficiency at Coldwater, Michigan, who encouraged the preparation of this paper. The Michigan State Hospital Commission generously aided the publication of this monograph.

TABLE OF CONTENTS

Page

I. Introduction 1

II. Method of Sampling 5

III. Diagnostic Criteria in Children's Free Drawings and Paintings 7

IV. Scale for Rating the Adjustmental Significance of Children's Drawings 23

V. Suggestions Concerning Further Investigations 27

VI. Summary and Conclusions 30

Bibliography 31

CHILDREN'S DRAWINGS IN A PROJECTIVE TECHNIQUE[1]

I. Introduction

A formal aspect in a study of projective techniques

In the exploration of human behavior projective techniques have come to play an important role. It has proved useful to employ to the same subjects a variety of projective methods in order to interrelate the results. Such interrelatedness may evidence new aspects with regard to a personality; it also may serve to verify or test one result against the other. In a study on *Certain projective techniques as a means of investigating the psycho-dynamic status of children* (12), carried out with 25 children of the fifth and sixth grades of the University Elementary School, Ann Arbor, Michigan, the author aimed at exploring these children's personalities by interrelating the results yielded by a number of projective methods. The children's dreams, early memories, and a new projective device, the Scribbing–Experiment (12, pp. 28), as well as the immediate art products made by the subjects during the individual sessions, have been considered to be the bearer of projections. These projections were understood and interpreted in terms of the children's psycho-dynamic status. The results of these methods were also related to some quantitative techniques such as employed in sociometry (22), and in rating the children's problem tendencies by means of the Haggerty-Olson-Wickman Behavior Rating Schedules (14). Still another interrelationship proved to amplify and consolidate the findings. It was the interelationship of *content and form.*

The consideration of form in this study was applied to one type of expression only: the expression in the children's art products.[2] Art production was carried out under various conditions; at times, drawing, painting, or clay modelling was performed rather casually; at times such activities were part of the children's play; occasionally the investigator suggested that the children might draw or paint the images of their dreams and early memories. The form elements of the immediate products were studied simultaneously with these children's previous art products which had been collected in school since Nursery. They were studied in relation to the clinical material as gained in interview, play, group observation and the study of the children's life histories. The latter, however, was not investigated thoroughly until after the major work was finished.

The Consideration of Form in Children's Free Artwork

Whereas in the clinical part of the investigation emphasis was laid on the contents of the children's projections, it was felt by the author that a study of the formal aspect would have a complementary value. Such a study would possibly objectify the individual findings; it would group the manifold forms of subjective reactions to a pattern which might reveal the structure of the personality concerned; it would tend to systematize the divergent and heteronomous data of empirical research. Furthermore, a study of form would have to deal with

[1] The research for this study was carried out at the University Elementary School, Ann Arbor, Michigan. The rare longitudinal collection of children's art products at this school which have been preserved under the direction of Professor Willard C. Olson furnished the material for this study.

[2] The term "art" in this study does not imply any aesthetic evaluation.

the fundamentals of human expression as they may be inherent in expressive movements (11, p. 5). A child who uses paper and pencil or paint freely without being directed will reveal himself through his expressive movements, through the style of his motion. Therefore the field of free artwork yields a prominent opportunity of studying a child's genuine expressions, his dynamics. (The word "dynamic" pertains to force in motion.) His expressive movements which have come to a standstill in his drawings and paintings can be determined and measured accurately. At the same time the frozen graphic elements offer the possibility of becoming "dissolved" again, as it were, and of being treated as though they were fluid and in motion.

As far as the investigation had been focused on the formal aspect 2200 previous drawings and paintings from these 25 children were studied. At the beginning the author had only one type of information about her subjects. It concerned the sociometric rating of the children.

Sociometric Scores Indicative of Adjustment and Maladjustment

On the basis of J. L. Moreno's technique (22), sociometric measurements had been obtained by U. Bronfenbrenner (10), in the following fashion: each child was asked individually three questions by the classroom teacher: 1. With what children would you like to work best? 2. With what children would you like to play best? 3. What children would you like to have sit near you? (10, II., p. 43). For each question the child was supposed to name three of his classmates who, one assumes, were named in order of preference. These answers which formed the children's sociometric scores revealed the degree of the child's popularity in his group; they served as a first working hypothesis for the following study inasmuch as the children's adjustment or maladjustment was roughly estimated on the basis of their sociometric scores (see Table 1).

TABLE 1

Two Sociometric Measurements of Twenty-five Children (19 boys = *B* and 6 girls = *G*), Fifth and Sixth Grades

Grade	Name	Number of Choices: Oct. 1941	Mar. 1942	Mean Score	I.Q.*
VI	B B	28	21	24.5	B B 139
VI	B A	26	33	29.5	B A 153
V	G C	12	10	13.5	
VI	B C	15	6	10.5	
VI	B D	14	6	10.0	
V	B G	14	14	14.0	
VI	G A	13	14	13.5	
V	B H	11	8	9.5	
V	B F	11	7	9.0	
VI	B 28	10	8	9.0	B 28 113
VI	G B	10	11	10.5	G B 108
V	B 22	8	11	9.5	
VI	B 29	7	2	4.5	
V	B 27	7	5	6.0	
VI	G 43	7	10	8.5	
V	B 23	7	10	8.5	
VI	B 30	6	7	6.5	
V	B 25	6	6	6.0	
V	B 31	5	4	4.5	
V	G 41	4	7	5.5	
VI	B N	3	8	5.5	B N 142
VI	G E	3	7	5.0	G E 121
V	B M	3	10	6.5	
V	B L	2	2	2.0	B L 110
V	B J	0	3	1.5	B J 149

* The intelligence quotients of only those children whose artwork is shown in this study have been indicated.

The concept of adjustment and maladjustment as employed in the present study refers to the descriptions of children's behavior of Schedule B of the Haggerty-Olson-Wickman Behavior Rating Schedules (14). These schedules (A and B) have been used by the classroom teachers of the University Elementary School, Ann Arbor, as a rating device which is supposed to indicate the teachers' opinions concerning the problem be-

havior of each child in their group. It may be mentioned, however, that those schedules which revealed the teacher's judgment on the problem behavior of the 25 children who have been the subjects of the present study, had not been consulted by the author until the investigation was completed.

Previous Studies of Drawings of Adjusted and Maladjusted Children

The background for the study on drawings of maladjusted and adjusted children is the study on drawings of mentally ill adults.[3] F. Mohr (21), was one of the first investigators who systematically studied drawings of the mentally sick in order to arrive at a diagnostic evaluation. He recognized that drawings belonged to the realm of expressive movements, a consideration which meant the first step toward the recognition of the aspect of form. Almost twenty years later H. Prinzhorn (24), made a study on the art production of the insane appreciating the formal or structural element. However, these form elements have not been defined by Prinzhorn in such a way that they may be used to determine the psychodynamics of a personality, that is a person's emotional and mental qualities and reactions in terms of his ability or disability to relate and adjust himself to whatever is expected from him. No differentiations have been attempted with regard to a person's expressions in drawing, that is, his graphic characteristics, and his psychic status (normal, neurotic, psychotic, feebleminded, etc.). Thus the recognition of the form elements did not yet lead toward a possible diagnostic differentiation of a personality. In recent years Schmidl-Waehner (25), studied 760 drawings from 38 children carefully attempting such differentiation. Some of her formal criteria are closely related to the concepts of Rorschach (19).[4]

Previous Studies of Drawings of Maladjusted and Adjusted Children

F. L. Goodenough's Drawing Scale (13), has been used by a number of authors for the study on drawings of maladjusted and adjusted children. Three of these investigations will be considered in this paper. Their results are not consistent. While F. K. Berrien (7), and M. Brill (9), claim that the Goodenough Scale differentiates between the drawings of the adjusted and maladjusted, it has been pointed out by N. N. Springer (26), that the differences which have been stated by Berrien and Brill are not significant and that "the scale fails to differentiate adjusted children from maladjusted ones." (26, p. 137). The method of discriminating between the adjusted and the maladjusted in these three investigations has been based on the item-analysis of the Goodenough Scale, that is, on the contentual element only. No formal aspect has been taken into consideration. In the opinion of the present author a differentiation between the adjusted and the maladjusted cannot be secured considering only the contents of a subject's art production. It has been, most likely, for this reason that the results of these investigations have been unsatisfactory. In addition to the lack of appreciation of the form element the determination of adjustment and maladjustment, as far as it is based on the

[3] The most comprehensive survey of the literature on the artistic behavior in the abnormal has been presented by A. Anastasi and J. P. Foley in a series of publications (1, 2, 3, 4).

[4] The author wants to express grateful acknowledgements to Dr. Lawrence K. Frank for his helpful suggestions.

Goodenough Drawing Scale, encounters still more handicaps: (a) the setup of the Goodenough Scale does not imply spontaneous free drawings, for the expressions of the subject are confined to a directed single task in drawing, a man; (b) only one drawing is used as basis for the interpretation of behavior; (c) there is no opportunity for recording a child's remarks or associations with regard to his drawing. These handicaps may be compensated for, if at all, only by a great number of subjects, i.e., by statistical treatment. But if the findings can be reliably expressed only through great numbers, they fail to give insight into the individual case.

A more specific handling of the concept of form in relationship to the problem of personality and its dynamic patterns has been presented by L. Bender in her *Visual Motor Gestalt Test* (6, p. viii). Bender's study has for its background the concepts of gestalt psychology, and form in her study is conceived in terms of the gestalt definition of perception. "Visually perceived configurations . . . have been offered to children and adults and mentally defective and mentally sick patients with the request that they be copied. The final product is a visual motor pattern which reveals modifications in the original pattern by the integrating mechanism of the individual who has experienced it" (6, p. 3). It may be said that Bender's method grants a higher degree of objectivity than the methods used for the interpretation of "free drawing." On the other hand, the dealing with free drawing attempts judgment and diagnostic understanding without the setup of an experiment. It aims at making use of products which are available at any time and which have not been produced for a specific purpose.

II. Method of Sampling for the Following Study

Sampling of the art products

A sample of 2200 drawings and paintings from 25 children have been studied with the intention to gain insight into the individual child's typical way of expressing himself in free artwork. These drawings and paintings had been made in some cases between Nursery and the Sixth grade, that is, over a period of eight years. Other cases presented a shorter period of time; none, however, less than five years. The child's chronological age between Nursery and the Sixth grade is approximately between three and eleven years. In order to study more closely a child's typical way of expression, about 400 pictures out of the 2200 have been selected and photographed. Those pictures were chosen which

(a) betrayed the characteristic features of a child's art production in general more prominently than other pictures did;

(b) changes in expression which might have taken place in the course of time were considered as seriously in the sampling as the continuum of characteristic expression;

(c) in general emphasis was laid upon a child's graphic expression *in succession*, so that the developmental process of these expressions, his "graphic history" might become evident.

The selection was distributed as evenly as possible over that period of years which the author had the opportunity to investigate. When the study was taking its final shape the 400 pictures were reduced to about 100 pictures. Since the sifting of the material was made under a typifying aspect unless a child's entire art production had been presented (12, pp. 74), any selected individual portion which has been dealt with in this study may be considered a *pars pro toto*.

Sampling of the subjects

In the course of the investigation the initial study of the drawings and paintings from 25 children was limited to the art products of a smaller number of subjects who were selected under the following aspects:

1. Extreme sociometric scores of six children were taken into consideration: B A, B B, B J, B L, G B,[5] G E. As has been pointed out before these scores were supposed to give some indication of the children's adjustment or maladjustment.

2. Exceptions to the assumption concerning the positive relationship between a child's sociometric standing and his adjustment. (a) A child with a low sociometric score whose art products show signs indicative of adjustment: B N. (b) A child with a sociometric score of a middle range whose products indicate maladjustment: B 28.

Sampling with regard to certain diagnostic criteria

In order to give evidence of a number of form elements which seemed to be indicative of certain tendencies in a personality, and in order to deal with the material more systematically, 13 pictures from six boys have been selected out of the 100 art products. Four of these six boys belonged, sociometrically speaking, to the category of the "extreme cases": B A, B B, B J, B L; two boys presented the "exceptions": B N, B 28. (See Plates 1-5.) In the cases of two girls, G B

[5] G B's score may not be considered an extreme one with regard to the whole group. However, according to the principle of selection in the original study G B's score is "extreme" (cf. 12, pp. 38-40).

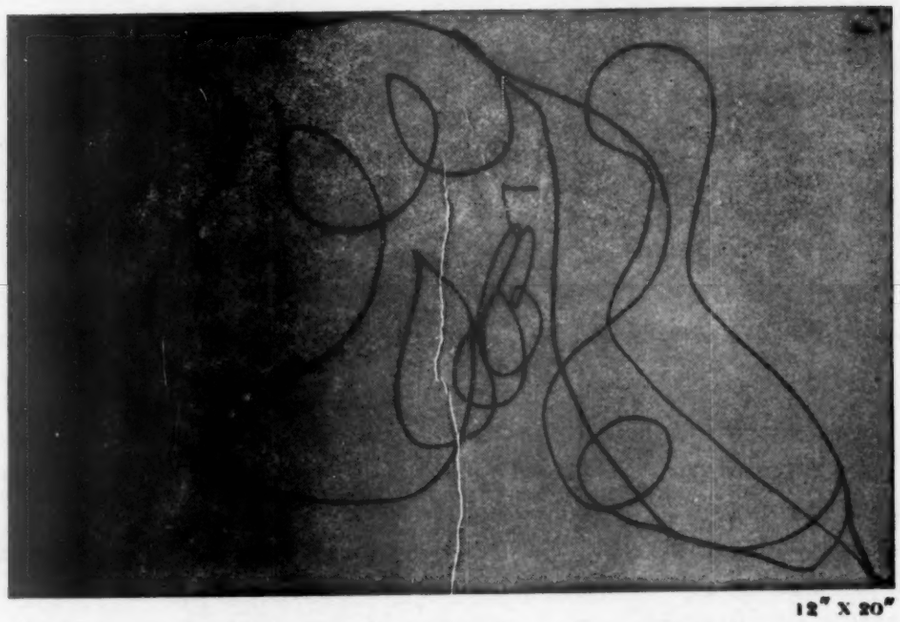
and G E, the main study was focused on their dreams. In order to supplement this material, a selection from these girls' previous artwork has been analyzed by the author and presented in the original study (12, pp. 272). In the present paper two pictures from each girl are shown on Plate 7. These pictures have been chosen for two reasons: (a) to demonstrate the procedure for rating (see pp. 23 of this paper); (b) to illustrate an experiment on the workability of the diagnostic criteria (cf. Table II, p. 25) which are defined in this study.

III. Diagnostic Criteria in Children's Free Drawings and Paintings

Prinzhorn (24, pp. 30), referring to Klages (18), called attention first to the concepts of rhythm and rule, with reference to graphic expressions. When the investigator employed these criteria in order to differentiate the child's psycho-dynamic status in his graphic expressions, she found a high discriminative power in those concepts. During further analyses of the children's art-products, the attempt was made to define "rhythm" and "rule" more specifically for practical purposes. The diagnostic intention led to the perception of more criteria. It is understood that there may be many more criteria of which the present investigator has not become aware. The following definitions of these concepts aim at revealing the child's psychic or mental attitudes inherent in his expressive movements, or in his relationship to the space in general, or in his experience of the outer or inner world. As these concepts are the result of a study of graphic expressions of children between about three and ten years of age, the following definitions should be understood within the limitations of this particular period of childhood. These definitions suggest tendencies rather than actual definite character traits.

PLATE 1

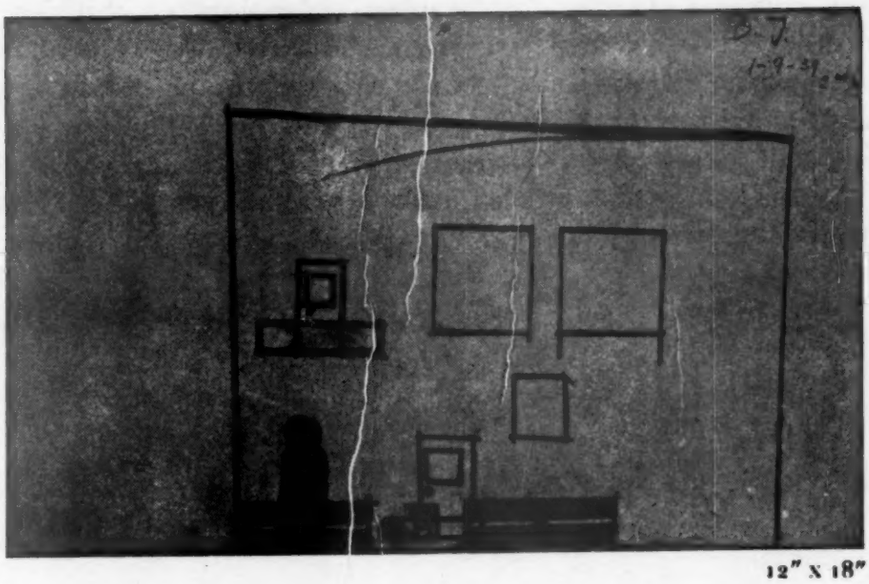
Rhythm and Rule



12" x 20"

a

1. Rhythm
B A
age: 7.8



12" x 18"

b

2(a). Rule
(Rigidity)
B J
age: 7·3

20" x 26"

b). Rule
(Inertness)
B J
age: 5.1

CRITERIA A

I. *Rhythm and Rule* (cf. Plate 1)

1. *Rhythm* is expressed through a flexible quality of the stroke (kinaesthetically connected with a relaxed, free movement). Rhythm conveys a sensitivity to the functioning of space connected with the time-element. Rhythm—Greek "rhy"—means "flowing"; flowing is a functioning of time. Such sensitiveness implies elasticity, spontaneity.

Rhythm stands for the inner dynamics in the individual.

2. *Rule* is expressed (a) through a rigid (torpid) quality of the stroke (kinaesthetically connected with tight spasmodic movements which become automatic, mechanical). (b) through an inert (smeary, sloppy) quality of the stroke (kinaesthetically connected with looseness). Inertness is an escape from the spasms of rigidity, an attempt to drop out of rule.

In Rule there is no feeling for the functioning of the space; nor is any connection with the time-element suggested. Spontaneity is lacking. regulation is dominant.

Rule stands for the static uniformity of the external world.

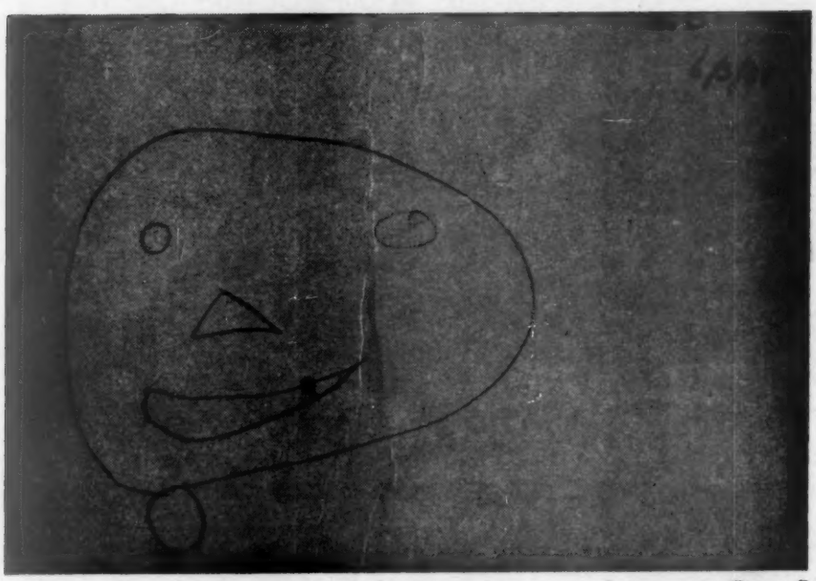
PLATE 2

Complexity and Simplexity

12" x 18"

a

1. Complexity
B A
age: 5.9



9" x 12"

b

2. Simplexity
B L
age: 6.7

II. *Complexity and Simplexity* (cf. Plate 2)

1. *Complexity* is expressed through the tendency toward a rather complete representation of the object, its individualization and differentiation. Merely structurally, it is expressed through an imaginative feeling for form, a tendency toward a creative form differentiation.

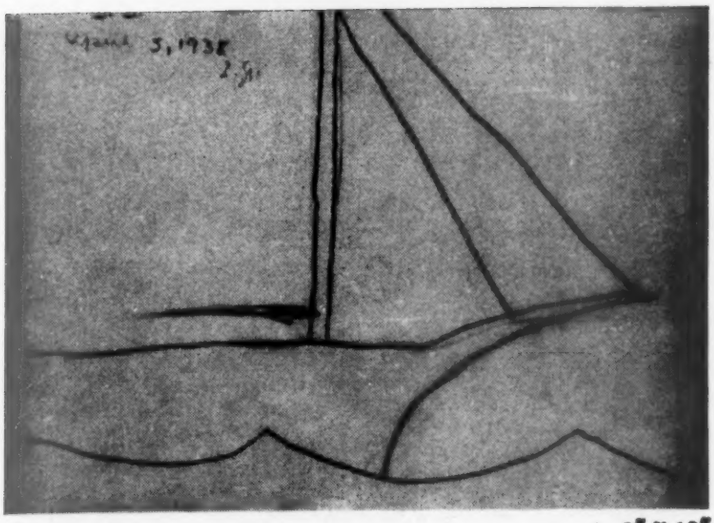
Complexity stands for differentiation and totality.

2. *Simplexity* is expressed through the reducing of the differentiated object, or merely structural form, to its simplest pattern, to its scheme. It is schematization. It conveys a loss or a lack of differentiation and a lack of ability to detach oneself. It also appears as conventionalism.

Simplexity stands for primitivation.

Plate 3

Expansion



9" x 12"

a

1 (a). **Expansion**
B B
age: 7.3

9" x 12"

b

1(b). **Expansion**
B N
age: 6.4

9" x 12"

c

1(c.) **Expansion**
B A
age: 7.1

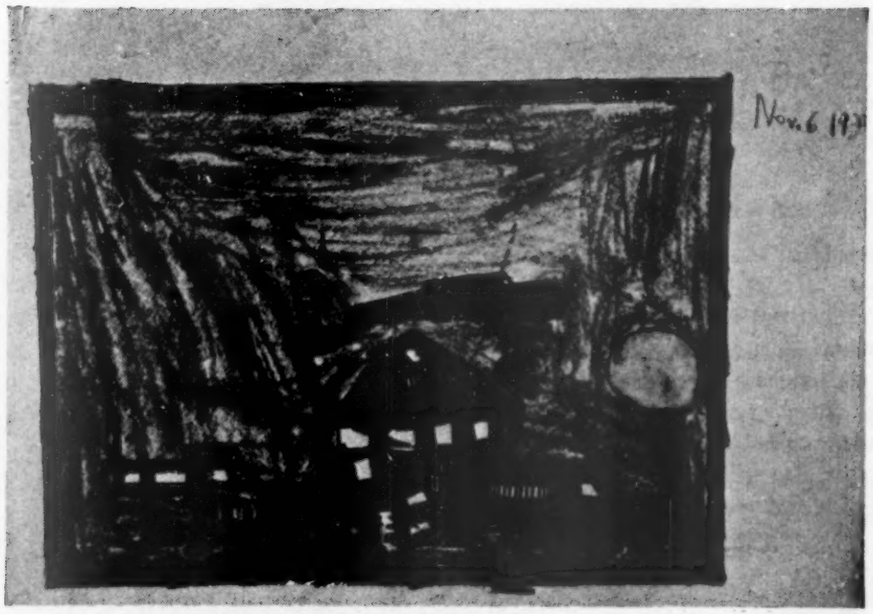
III. *Expansion and Compression* (cf. Plates 3 & 4)

1. ***Expansion*** is expressed (a) through the widening (opening) of the space at the drawer's disposal, by presenting only a part of the object—this might also be an abstract design—which has to be completed by imagination; (b) through the creation of a "spacious" background which may be presented on a sheet of paper of any size; (c) through the creation of an experience of space by the means of rhythm and integration. For example, a well formed representation of an explosion expands the space by "bursting" it. Such an expression conveys controlled aggressiveness, willful and forceful activity; (this is a rather virile form of expression). Expansion stimulates the imagination dynamically. It conveys an atmosphere of freedom, courage, adventure, and may be a symptom of vitality and of a healthily developed extraversion.

Expansion stands for a direction toward the surrounding world; for the potential ability of making contact.

PLATE 4

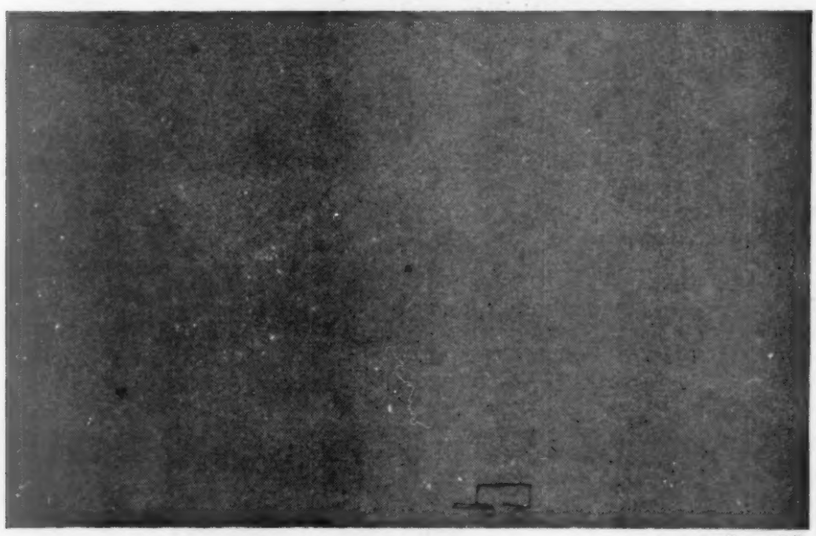
Compression



2. Compression
B J
age: 8.1

12" x 18"

a



2. Compression
B J
age: 10.7

12" x 18"

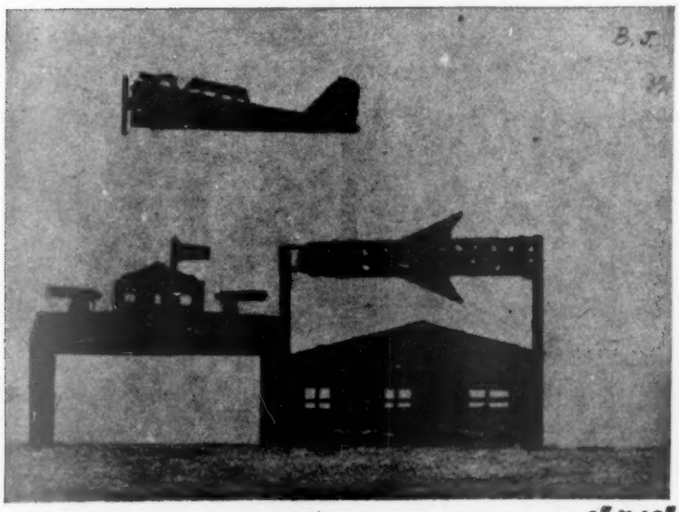
b

2. *Compression* is based on a meticulous, fearful concept of space, expressed either in the spatial appearance of the object itself, or in its spatial relationship to other objects, or to the space at the drawer's disposal. Compression conveys a feeling of discomfort, of being shut in, of pressure and compulsion. Compression may be, if connected with other traits, a symptom of a neurotically developed introversion, even of a compulsion-neurosis.

Compression stands for isolation.

PLATE 5

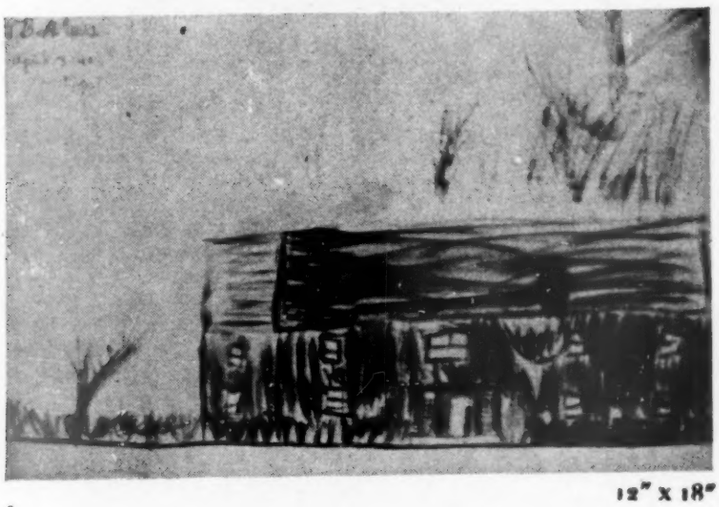
Integration and Disintegration



9" x 12"

a

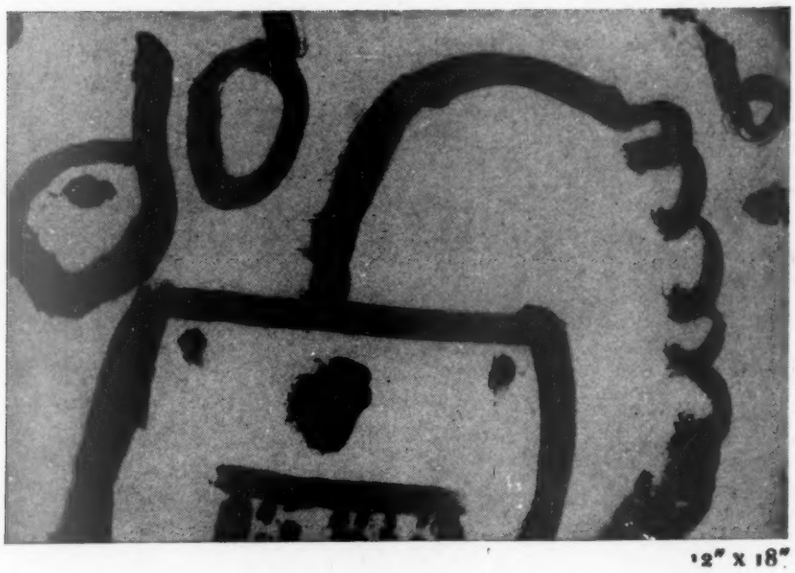
1(a). Integration
(Synthesis)
B J
age: 8.5



12" x 18"

b

1(b). Integration
(Centricity)
B A
age: 9.2



12" x 18"

c

2(b). Disintegration
B 28
age: 6.3

IV. *Integration and Disintegration* (cf. Plate 5)

1. ***Integration*** is based on inner organization. It may appear (a) as a merely synthetical or combinative function. The feeling for the "whole," is noticeable although the expression of such feeling may be poor.[6] (b) Integration may be expressed on a level which is comparable to that of genuine artwork. Things (objects as well as lines and curves, etc.) are in the "right" place, in the right proportion and relationship to one another. Each of them is an indispensable part of the whole. They are essentially centered around some external or internal force. Such centricity may be expressed by the means of representation as well as merely structurally.

Integration stands potentially for cosmic order in the individual.

2. *Disintegration* (a) lacks the synthetical function; there is no tendency toward harmony. Things (objects as well as lines, etc.) are conceived in a piecemeal way. They may be contaminated, i.e. two or more things may be represented as one, however, without having become a oneness. It does not make any sense. (b) Disintegration lacks the center. Things are disconnected, they fall asunder. There is nothing related to anything. The product conveys coldness, it alienates the beholder. Disintegration is a sign of eccentricity, or even of a serious split in the personality, and might be, if connected with other traits, a sign of schizophrenia.

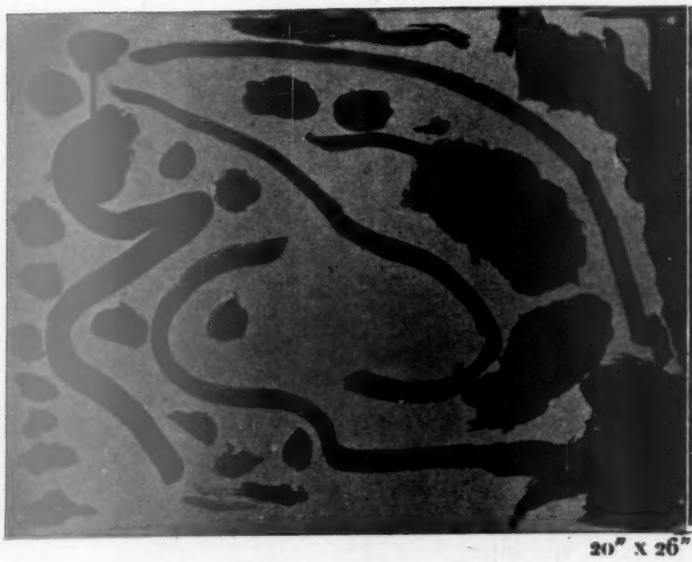
Disintegration stands for chaos in the individual.

---

[6] The example by B J (Plate 5a) shows the presence of the synthetical function but the absence of centricity. The functioning of synthesis is most likely due to the boy's high intellectual abilities, and the lack of centricity to his emotional maladjustment.

PLATE 6

Examples of Rhythm and Rule (Inertness)



20" x 26"

a

G B, age: 4.3

20" x 26"

c

B L, age: 4.11

20" x 26"

b

B A, age: 5.10

20" x 26"

d

B L, age: 5.4

V. *Realism and Symbolism*

1. *Realism* is shown through the prevailing of the representational element over the structural one. An interest in the world of objects is dominant. The structural counterpart is a kind of "mechanical imagination" as in engineering drawing. This is only true of boys in the cases thus far studied.

2. *Symbolism* exists where the represented object obviously stands for something else; or, where the structural element prevails throughout in a child's art-work. Symbolism is the projection of the individual's inner world. The predominance of symbolism in a child's production during middle childhood is a symptom of a neurotic disturbance.

The Antinomic Quality

The diagnostic criteria have been defined in terms of a positive and negative aspect, respectively. These aspects have been confined to human behavior and its desirability concerning the individual's existence. One should not employ these criteria without being conscious of such confinements and concepts. Moreover, one should be aware of the dynamic antinomy inseparably associated with these pairs of opposites. There is an intrinsic tension within each pair. The relationship between one principle and its opposite becomes fully evident if one considers that a positive as well as a negative aspect may be ascribed to each of these concepts. There are elements which might point to negative traits in each of the five criteria indicative of positive personality traits; and there are elements which might point to positive traits in each of the five criteria indicative of negative personality traits. It is true, however, that the weight of these aspects as to their positive or negative significance seems to be distributed unevenly. As these criteria have been found empirically, in the course of studying the graphic expressions of the children together with their adjusted or maladjusted behavior, such uneven distribution became evident; and yet, the prevalence of the positive aspect in the criterion of rhythm, for example, should not prevent us from being aware of a possible negative element which is attached to the concept of rhythm, too. In order to employ such criteria legitimately one has to conceive their transcendent quality. Only against the background of the reversibility of their aspects may they function and be kept alive.

In the following, the criteria will be considered under reversed aspects.

CRITERIA B

I. *Rhythm and Rule*

1. *Rhythm.* Krötzsch and Prinzhorn observed that occasionally the expression of rhythm appeared in cases of diminished consciousness, when the will was absent or feeble. In these cases rhythm is nothing but motion, rhythmic movement, Bewegungsrhythmus; its essential characteristic is that there is no tendency toward any form.[7]

2. *Rule.* The statics inherent in the concept of rule is needed for any construction, for any steadiness. Furthermore, uniformity, as far as it is conformity, is desirable.

II. *Complexity and Simplexity*

1. *Complexity* might become too manifold, too diverse.

2. *Simplexity* being understood as simplicity appears in sketches of the great masters who

[7] "Continuous rhythmic movement without attempting formation, or continuous sliding back into rhythmic movement is indicative of mental disturbance." W. Krötzsch (20, p. 17): see also A. Prinzhorn (24, pp. 312).

with a simple line drew a "complex" figure or landscape. Such simplicity means the summation and unification of the possible complex forms or patterns. It has "overcome" diversity in such a fashion that nothing seems lost; for the essence of the manifold is preserved and present. ("Simplexity" suggests a quality which never "overcomes" the manifold items; which does not reach the level of differentiation.)

III. *Expansion and Compression*

1. *Expansion* may appear as a flight of ideas, or as escaping one's self. If it is combined with dynamics which are not controlled, it suggests aggressiveness.
2. *Compression.* There is a necessity for confinement, positively expressed in self-discipline.

IV. *Integration and Disintegration*

1. *Integration* is in danger of becoming stilted or stagnant.
2. *Disintegration* is necessary as a "reminder." It should be always close to integration as a possible danger—otherwise integration becomes sterile. In fact, integration and disintegration have to be intrinsically related to one another. (The disintegrated art of some of the modern expressionists may be considered a revolution against a stilted perfection.)

V. *Realism and Symbolism*

1. *Realism* can abstract the individual from his inner world.
2. *Symbolism* gives meaning to everything. "Alles Vergängliche ist nur ein Gleichnis." (Goethe). Realism is only meaningful if it is symbolic at the same time.

The Ambitendency of the Opposites and the Phenomenon of the Third

In realizing the reversibility of the positive and negative aspects of the criteria which have been defined in this paper, one is led to a further consideration. Jung, discussing the duality of the will, refers to Bleuler's concept of " 'ambitendency' as something generally present, bearing in mind that even the most primitive motor impulse is in opposition; as, for example, in the act of extension, the flexor muscles also become innervated. This normal ambitendency, however, never leads to an inhibition or prevention of the intended act, but it is the indispensable preliminary requirement for its perfection and coordination. For a resistance disturbing to this act to arise from this harmony of finely attuned opposition *an abnormal plus or minus would be needed* on one or the other side. *The resistance originates from this added third.*[8] . . . The abnormal third frees the pair of opposites which are normally most intimately united, and causes their manifestation in the form of separate tendencies . . ." (15, p. 194).

Considering the criteria, it is true that the most undisturbed expression would be an "ambitendencious" one. Rhythm, for example, can not become Bewegungsrhythmus if the statics inherent in the concept of rule (Criteria B I, 2) govern the rhythmical expression to a certain extent. Rule can not appear as rigidity (torpidity) or inertness if the statics of the phenomenon of rule tend to "move" or to "flow" as they do in rhythm. If one looks at the drawing which has been selected to indicate the expression of rhythm (Plate 1, a) and also at those on Plate 6, a and b, one notices that these highly rhythmical expressions are governed, confined, pulled together by some kind of order which opposes mere rhythm. But if one beholds the examples of rule on Plate 6, c and d, and also those

[8] Stressed by the writer.

on Plate 7, b and c, one will not find any sign of rhythm.[9] Hence it is the phenomenon of the "third," namely, the absence of the ambitendency, which indicates the disturbance. The presence of the ambitendency would, however, not be adequately rated by a midpoint value. For the "harmony of finely attuned oppositions" does not consist of two parts (or sides) which are equally balanced from the quantitative point of view. The empirical investigation led to the observation that the "harmony," namely, the quality of ambitendency can be recognized by a certain overweight of those criteria which have been considered under the positive aspect in "Criteria A."

The Practical Approach

In order to arrive at a diagnosis one has to remain conscious of the fact that the criteria presented in the pairs of opposites suggest tendencies rather than actual traits. Such "tendencious" quality may also be noticed in the definition of each criterion; for it has been defined in terms of its extreme possibilities, of its positive or negative potency. Therefore a reference to a concept like integration, described as the expression of centricity (Criteria A, IV, 1b), or to that of simplexity, described as simplicity (Criteria B, II, 2), can be made or understood only as an approximate one. The same may be true of cases where the negative aspects are prevailing. With such reservation in mind, each free art product may be analyzed as to which of the criteria is apparent in it. This analysis will be based on Criteria A, not on Criteria B. Occasionally one may have to refer to the latter. It is advisable to analyze the products in terms of "either-or," i.e., with a relative rather than with an absolute measure. Four of the five antinomic pairs consider the form (structure) rather than the content (the represented object), while the fifth pair can not be employed so readily as the four other pairs, for in order to interpret the content of a picture one has to have more information about the subject than in a case of a merely formal (structural) analysis. There is, of course, no necessity that all the (eight or ten) criteria become evident in every drawing or painting. Neither rule nor rhythm might be present, neither complexity nor simplexity, and so forth. But it is important to consider carefully the combination of the different criteria, each of which might have a different weight. The investigator herself has not yet gained enough insight to evaluate the meaning of such possible combinations.

While it seems feasible to consolidate systematically criteria like those suggested in this study, on an objective basis, there is little possibility of evading some subjective elements which are intrinsically connected with the evaluating, and even with the conception, of those objective data: (1) It is understood that there are great differences as to the degree in which any quality may appear; and such a degree might be decisive. Even a system of grading would not overcome the subjective element. (2) The evaluation of the combination of the different criteria also evades objectivity. (3) The fact that each of the criteria may appear under a positive or a negative aspect, requires experience and insight from the investigator and even more specifically a responsiveness to graphic expressions and their peculiar

[9] If one examined the other criteria by the same method they would yield corresponding results.

gestalt. Such a qualification can not be derived from a standardized objective measure.

In employing analytical means for a diagnosis of living beings or their expressions, it is of the greatest importance to remain constantly aware of the whole dynamic entity. The criteria which have been suggested would become meaningless or even misleading if they were employed mechanically, without a responding and responsible feeling for the whole living substance or quality or process which they aim to measure.

IV. Scale for Rating the Adjustmental Significance of Children's Drawings

Procedure for rating

After the sampling from the child's drawings had been made, each of his products was analyzed by the investigator with reference to Criteria A. A judgment was made as to which of the eight qualities was present, absent, or uncertain. Each judgment of each drawing was marked more specifically according to whether rule appears as an expression of rigidity (R), or of inertness (I), or in either fashion; whether integration appears as synthetical function (S) or as centricity (C), and so forth (see Table 3).

The next step was to arrange the criteria which have been decided upon in such an order that they could be scored (see Table 4). The scale for rating such criterion was set up in this fashion:

	rhythm	undecided	rule
score	1	0.5	0
	complexity	undecided	simplexity
score	1	0.5	0
			and so forth

That is, score 1 is given for the recognizable presence of a quality indicative of good adjustment, score 0 for the absence of the favorable characteristic and the recognizable presence of an unfavorable quality, score 0.5 for a midpoint in which the extremes are not obvious or easily decided. The total score for a criterion or all criteria for a group of drawings thus represents the degree of presence of qualities indicative of favorable adjustment.

Suggestion for evaluation

If the scale is used for rating the adjustmental significance of children's drawings, the writer suggests going on in the following manner in order to evaluate the data which have been obtained through the foregoing analysis:

(1) To write down the qualities which have been diagnosed in order of their prevalence. (See Tables 5, 6.)

(2) To add all the specifications which have been attached to the different qualities by definition. (See Criteria A.)

(3) To weigh each quality considering Criteria B.

(4) To look at each picture again to check the decision.[10]

Key. For the purpose of scoring, the designations of the criteria have been abbreviated as follows:

rhythm = rh
rule = ru; R (rigidity), I (inertness)
complexity = cl
simplexity = si
expansion = ex
compression = co
integration = in; S (synthesis), C (center)
disintegration = dis; mS (minus synthesis), dis; mC (minus center)

An experiment has been made in order to find out how the definitions work. Four definitions concerning the criteria Rhythm, Rule, Expansion, Compression (only Criteria A) were read to 31 adults. They judged the pictures L, M, N and Q (See Plate 7). The result of this experiment is shown in Table 2.[11]

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[10] It is advisable to turn the pictures around in order to concentrate on the structural element and not be distracted by the represented object.

[11] All of the judges were college students; 22 graduates, primarily engaged in teaching, who were taking a course in Child Development and Childhood Education; nine undergraduates with no specific training or experience.

Plate 7

Pictures by G B and G E

9" x 12"

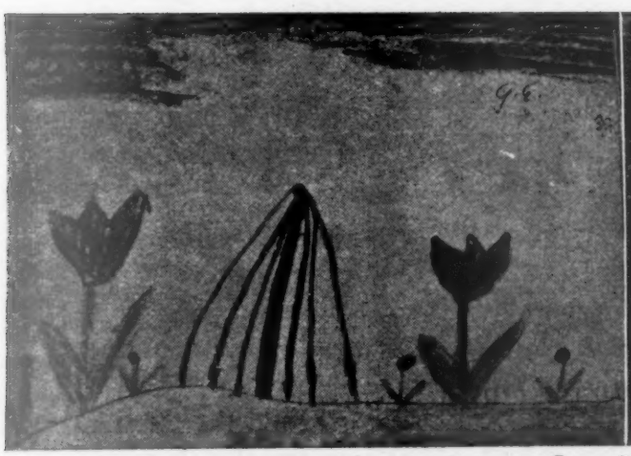
a

M

12" x 20"

b

Q



9" x 12"

c

N

12" x 18"

d

I.

TABLE 2

Picture	Number voting for each classification					
	rh	ru	Did not judge rh and ru	ex	co	Did not judge ex and co
L	31	0	0	21	7	3
M	24	6	1	25	6	0
N	1	29	1	5	21	5
Q	4	25	2	4	25	2

With the exception of the vote concerning picture L (Expansion or Compression), the majority of the judges agreed with the investigator's judgment. With regard to picture L, it should be mentioned that the judges had not been told that there might not appear any of the four criteria. Those who did not decide on Rhythm or Rule, Expansion or Compression, either misunderstood the directions or were uncertain.

It is true that picture L, as far as the feeling-tone is concerned, expresses Expansion rather than Compression. In the strict sense of the definitions, however, picture L can not be ascribed to either of these two criteria.

Example for using the rating scale

According to the principles of sampling (cf. pp. 5 of this paper) 16 products from the entire artwork of two girls, G B and G E, i.e. eight pictures from each girl, have been selected and analyzed in terms of the diagnostic criteria. Tables 3-6 show the procedure of analysis and rating. Two pictures from each girl are shown on Plate 7.

TABLE 3

Showing which of criteria A appears in

Drawing	A	rule R	simplexity	compression	undecided
"	B	rhythm	simplexity	expansion	undecided
"	C	rhythm	simplexity	expansion	integration C
"	D	rule R I	simplexity	undecided	undecided
"	E	rhythm	complexity	expansion	integration C
"	F	rule I	simplexity	expansion	undecided
"	G	rhythm	complexity	expansion	integration S
"	H	rule I	simplexity	expansion	integration S
"	J	rule R	simplexity	compression	disintegration mC
"	K	undecided	simplexity	expansion	integration S
"	L	rhythm	complexity	undecided	integration C
"	M	rhythm	simplexity	expansion	integration C
"	N	rule R	simplexity	compression	undecided
"	O	rule R I	simplexity	expansion	undecided
"	P	rhythm	simplexity	expansion	integration S
"	Q	rule R	simplexity	compression	undecided

TABLE 4

Showing arrangement of criteria for the purpose of scoring

Drawing	G B				Drawing	G E			
B	rh	si	ex	—	A	ru	si	co	—
C	rh	si	ex	in	D	ru	si	—	—
E	rh	cl	ex	in	F	ru	si	ex	—
G	rh	cl	ex	in	H	ru	si	ex	in
K	—	si	ex	in	J	ru	si	co	dis
L	rh	cl	—	in	N	ru	si	co	
M	rh	si	ex	in	O	ru	si	ex	
P	rh	si	ex	in	Q	ru	si	co	
	7·5	3	7·5	7·5		0	0	3·5	4
			Total	25·5				Total	7·5

TABLE 5

Suggestion for Evaluating the Rating Scale

		G B Criteria A
I.	1	Rhythm 7.5:8 Flexibility elasticity spontaneity
III.	1	Expansion 7.5:8 Freedom (courage) healthily developed extraversion
IV.	1	Integration 7.5:8 $(C)_4:(S)_3$ Inner organization synthesis centricity
II.	2	Simplexity 5:8 Schematization lack of differentiation and detachment primitivation*
II.	1	Complexity 3:8 Differentiation creative imagination

* Picture M which has been scored "si" has a positive quality: cf. Criteria B, II, 2 (page 20). This fact would have to be considered in the evaluation. Also, in the case of G.B. the tendency toward conventionalism is marked: cf. Criteria A, II, 2 (page 11).

TABLE 6

Suggestion for Evaluating the Rating Scale

		G E Criteria A
I.	2	Rule 8:8 $(R)_4:(I)_4$ rule R 2:8 rule I 2:8 rule R I 2:8 Rigidity (torpidity) Inertness (sloppiness)
II.	2	Simplexity 8:8 Schematization primitivation lack of differentiation and detachment
III.	2	Compression 4:8 Pressure isolation (fearful concept of space) neurotically developed introversion
III.	2	Expansion 3.5:8 Freedom healthily developed extraversion
IV.	1	Integration 4:8 Integration S Inner organization synthesis
IV.	2	Disintegration 4:8 Disintegration in C Lack of centricity eccentricity: (lack of synthesis, of harmony)

V. Suggestions Concerning Further Investigations[12]

Since the present study has been limited to a comparatively small number of subjects it would be desirable to verify the findings which have been secured thus far, through further investigations. Such investigations would employ the method of the present study but, at the same time, they may include other aspects and deal with more specific ramifications. Some suggestions as to further studies may be given in the following:

Artistic gift and psychological evaluation

Although it is understood that children's art production in the proposed study should not be evaluated from the aesthetic point of view, one has to consider the great differences of artistic talent in children and the relation of these differences to the psychological value of their expressions.[13] While Anastasi and Foley (5, p. 178), view skillfulness as a drawing characteristic like other characteristics of artistic behavior, it was felt by the present author that skillfulness as well as "natural gift in art" presents an obscuring factor to the psychology of artistic behavior. Children who are not gifted, or those who try to master a subject which they are not able to, are inclined to adopt a rigid stroke or pattern which, therefore would have to be evaluated in terms different from those which stand for mere psychological rigidity.

The role of the child's chronological age.

It is assumed that expressions of younger children are less disguised. Subjects of an investigation like the present should not be below three years of age and, besides, their eye-hand coordination has to be intact. At the age of about five, one may assume that the latency period will influence the child's free expression. During this time repression is supposed to become dominant over the sexual impulses of early childhood. Toward the end of middle childhood which occasionally is covered up by a routinized "skill" in drawing, self-consciousness presents an obstacle to free expression. Whether and how such an obstacle can be overcome, and whether freedom of expression can be saved would be worth studying.

The relation of a child's graphic history to his organismic growth

Wherever children's art products have been collected over a period of years, as has been the case at the University Elementary School, Ann Arbor, Michigan, it may be suggested that children's graphic histories, that is the development of their expressions in free art-work, may be studied in relation to other growth impulses as measured by the methods of longitudinal growth studies by W.C. Olson and B. O. Hughes (23). If a child's social and emotional maturity can be judged on the basis of his drawing and painting behavior, it should be possible to circumscribe a pattern of emotional growth which might be related meaningfully to the child's "organismic age" (23, p. 201).

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[12] The author wants to thank Miss Esther L. Belcher for her help in clarifying some of the following concepts.

[13] G. Kerschensteiner (16), C. Kik (17), and W. Stern (27), made thorough studies on children's artistic talent; however, they did not take into account the psychological value of the child's expression.

The child's artistic expression indicative of fixations

By means of the presentation of a child's art-work in succession the author has given evidence of an enuretic child's regressive behavior (12, pp. 74). M. Brick (9, p. 142), observed in a child the same type of artistic activity as has been described in the case of the enuretic child. Brick interpreted the art products of her subject likewise as regression to the anal level. Developmental studies on children's artistic behavior should consider possible fixations on different stages in the psycho-sexual development.

The role of the sexes

The following suggestion is related to Criteria A, V, 1 and 2, dealing with *realism-symbolism*. It has been stated under Criteria A, V, 1, that, thus far, only in boys *realism* has been found to be expressed structurally, in engineering drawing. Since this type of expression is most closely related to a so-called "normal" boy's interests, one may assume that some equivalent relationship might also be present in girls. It has seemed to the author, that, at times, girls prefer "abstract designs" to other forms of expression. Although such presentations show the prevalence of the structural element, a phenomenon which, according to Criteria A, V, 2, would suggest *symbolism*, they do not necessarily indicate personality traits attached to this criterion. It is beyond the insight gained by the investigator at this point, to attempt further differentiations within similar structural patterns. However, it may be stated that the divergencies in artistic expression, concerning the sexes, seem to become most obvious in the criteria of *realism-symbolism*. These criteria imply, more than any of the others, the individual's metaphysical attitude toward the world, his *weltanschauung*.

Combinations with other methods of personality diagnosis

Combination with the Rorschach technique. A comparison between the results and conclusions of this method and the results and conclusions of the Rorschach would be interesting. Whereas in Rorschach's projective technique a personality can be characterized by a single administration, the present method which may be called a developmental projective technique, draws from time sampling of the child's art production the sequences of his development.

Combination with other methods of classifying drawings. From the great number of studies which have attempted the classification of drawings, one of the most recent investigations may serve for an example to indicate how the present method could be employed within a different type of technique. Anastasi and Foley (5), have given an account of some formal characteristics of the drawings of adult psychotics and a normal group. This account, however, remains loosely descriptive, without any point of reference of grouping the criteria found by these authors. It would be easy to translate Anastasi and Foley's descriptions of the drawing behavior in the abnormal and normal into the terms of the definitions of the *diagnostic Criteria* as presented in this study. The designation of "crude, schematic, simplified drawings" (5, p. 190), would appear under *rule (rigidity)* and *simplexity;* "the greater fullness of realistic detail", (5, p. 190), under *complexity*, (all Criteria A). "Exaggerated meticulousness of detail" (5, p. 190), would be registered under *rule* (rigidity), *compression* (both Cri-

teria A), and *complexity* (Criteria B II, 1); the "overlapping functions of lines . . . (or) . . . figures in space" (5, p. 191), has been described in the present study as "contamination" which belongs to the patterns of *disintegration*, (Criteria A). Anastasi and Foley's descriptions of their Ss' drawing behavior and the definitions of the diagnostic criteria coincide in their indication of abnormal (maladjusted) and normal (adjusted) behavior. Many more examples of such coincidences could be cited.

It should be noted, however, that all the subjects of the present study belong to the "normal" group, according to Anastasi and Foley's classification;[14] and that the present investigator would not apply the diagnostic criteria to subjects beyond middle childhood, unless the findings of this study have been extended and verified, or modified, for adults (cf. p. 7 of this paper). The reason that these examples of identical findings have been given here, is merely to indicate that the descriptive approach could be converted into systematic evaluation in such a fashion that the appreciation of the form element would be expressed methodically.

[14] The normal in Anastasi and Foley's study differ from the abnormal merely by not being institutionalized (5, p. 170). No definition of the term "normal" has been given otherwise.

Studies on artistic media

(a) For further understanding of the differences in artistic expression it is necessary to examine the different media which are used as to their technical bearing on form expression: pencil, crayon, chalk, or different kinds of paint; or brush, or fingers. (b) Color as psychological means of expression is a relevant factor the investigation of which has not been taken up in this study. Schmidl-Waehner (25), and Brick (8), interpret a child's expression in terms of the use of, or the reaction to, color where the present investigator interprets the same quality or behavior in terms of graphic form expression. Such analogy suggests the study of the relationship between the use of color and mere graphic form expression.

VI. Summary and Conclusions

The foregoing study represents a part of an investigation on the psycho-dynamic status of children. The child's present status, as it appeared to clinical observation, has been viewed against the background of his development. Whereas a number of immediate projective methods were instrumental to the clinical approach, the study of the child's previous art products served for the investigation of his developmental history. It was the aim of the study of children's expressions in free art work to uncover certain form elements which may indicate either adjustment or maladjustment in a personality. The concept of adjustment and maladjustment respectively, used in this study, was in agreement with the concept underlying the description of the children's behavior in the Haggerty-Olson-Wickman Behavior Rating Schedules. The actual judgment on a child's adjustmental qualities in each individual case was determined by the investigator as a result of her clinical observations. Maladjustment implied emotional immaturity, regressive behavior, destructive tendencies (destructiveness of somebody or something, as well as self-destructiveness). Adjustment coincided with emotional maturity, constructive behavior, creative abilities.

The products of eight children have been subjected to analysis in this study. These children were selected on account of their sociometric ratings. Four of them were low in popularity with their group, three high, and one had a sociometric score of a middle range. Three children out of the four who were unpopular with their classmates, B L, B J, G E, showed definite signs of maladjustment as determined by the results of the various projective techniques. In these children's previous art products which were analyzed according to the Criteria (Criteria A), maladjustment was evidenced in *rule* (rigidity as well as inertness), *simplexity, compression, disintegration,* and a lack of *realism,* or the prevalence of *symbolism.* In the art products of three children B A, B B, G B, whose sociometric scores were high, there was evidence of adjustive ability as expressed in the prevalence of *rhythm* over *rule, complexity* over *simplexity, expansion* over *compression; integration* was dominant, and a healthy attitude toward *realism.* One boy, B N, who rated low, sociometrically, showed adjustment in his artistic behavior. One boy, B 28, whose sociometric standing was medium showed maladjustment in his drawings. However, in the cases of these two boys the disagreement between their sociometric standing and their adjustmental qualities disappears if one does not consider these boys' scores but instead looks at the *trend* which is shown in their sociometric measurements of October 1941, and March 1942.

A variety of methods have been interrelated in the investigation which has been the substrate of this study. The results yielded by the qualitative approaches of projective devices have been compared with the results of quantitative methods such as J. L. Moreno's sociometric technique and the Haggerty-Olson-Wickman Behavior Rating Schedules. In addition to the interrelatedness of these divergent methods the phenomena of form and content have been examined as to their reciprocal function. Some form elements have been studied with regard to their diagnostic value. Since the study of these form

elements was realistically related to the clinical work with the children, including the study of their life-histories, and since the diagnostic suggestions of these form elements were in agreement with the clinical findings, one may draw some conclusions concerning the differentiating value of form.

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